A8900-7.2F (A)
6/88

Shipbuilders
Council of
America

1987 IN REVIEW

SHIP REPAIR REPORT

This publication is the second of a series of quarterly statistical reports to be issued by the Shipbuilders Council of America, which will analyze the following issues on an annual basis. The schedule set for these reports is as follows:

March:	New Construction
June:	Ship Repair
September:	Manpower and Labor Issues
December:	Contracts/Financial

Shipbuilders Council of America
1110 Vermont Avenue, NW
Washington, DC 20005-3553
202-775-9060

OVERVIEW

The ship repair market for U.S. shipyards has been as oriented to the U.S. Navy as has the new construction market. The data in this report shows that U.S. yards will complete 1987 with 86% of repair activity dedicated to U.S. Navy contracts. Yet, repair activity is distorted by governmental policies in much the same manner as the new construction work.

This is seen, in particular, by the fact that the Navy continues to allocate a preponderance of its work to Naval shipyards despite recent evidence that they remain high cost and inefficiently managed industrial facilities. In fact, in a recent study by Coopers and Lybrand, an accounting and management consulting firm operating under a Navy contract, a major finding indicated that "Navy has little demonstrated ability to effectively manage and control industrial operations."

While it is true that a number of the Coopers and Lybrand recommendations have in fact been acted upon, it is also true that the public shipyards continue to receive the lion's share of the Navy's ship maintenance dollars. In fiscal year 1987, the public sector received 67% of the Navy's total ship repair budget, compared to 1982 when 62% of the budget went to Navy yards.

This allocation of work to the public sector comes at a time when the private sector continues to close down facilities and lay off workers. In 1987, five more shipyards shut down and an additional 5,000 production workers lost their jobs. The total since October 1982 is now 41 shipyards closed from the original 110 and the loss of 32,000 production workers from 112,000 in the original count. At the same time, the public sector employment levels continued to show stability and, in some cases modest growth. In October 1987, Naval shipyard employment stood at 72,400, which is a remarkably stable development, when compared to October 1982, when employment was 71,700 in full-time, permanent staff. In addition, this data does not include the increasing use of temporary yard employees, and those military personnel utilized at Shore Intermediate Maintenance Activities (SIMAs) and repair tenders.

The issue of the proper balance between public and private sector workload is one that has become subjected and subsumed to political considerations, rather than a rational discussion on national policy in regard to industrial base maintenance. With the private sector depending on Navy ship repair work to such a great extent, policies in regard to repair strategies have an enormous impact on the private sector. In fact, Navy maintenance policy-makers can determine whether or not the private repair industry will survive the current period. Additionally, it is ironic that during a Reagan Administration period when privatization was an important philosophical tenet, the private sector not only competed directly against the public sector, but also suffered job loss while the public yards prospered.

Concerns over the proper balance between public and private capability, however, may recede into the background as a more immediate concern, in regard to future budgetary resources devoted to Navy ship repair, will move to center stage. Reports of substantial shortfalls in repair funding for FY 1988 continue to be heard. As operations in the Persian Gulf continue and without a request for emergency funding to pay for those operations, nearly $500 million in Navy ship repair funding is at risk. Deferrals of FY 1988 repairs into FY 1989 will exacerbate problems for future budgets.

Despite increased repair activity internationally, caused in part by the Persian Gulf activities, American shipyards will find their greatest commercial opportunities in the passenger ship arena. Geographical location plays an important part in commercial ship repair and Gulf related repair is not likely to migrate to U.S. facilities.

Finally, in the case of major refits, modernizations or conversions, U.S. yards face the same international subsidy factors as they do in new construction. For example, West Germany will grant 20% subsidies to conversion projects for foreign and domestic owners who do their work in German yards. Thus, the political debate on the future workload balance between the public and private sectors holds the key to the direction in which ship repair facilities will go in the future.

John J. Stocker
President

NAVY SHIP REPAIR

In 1987 the Navy ship repair base in this country included forty-eight private yards and the eight Navy yards. In addition, countless small facilities and machine shops did some minor work toward the overall repair effort. The year saw a continuation of Navy repair policy which increases the number of Selected Restricted Availabilities (SRAs) and Phased Maintenance Availabilities (PMAs) while the number of Regular Overhauls (ROHs) continued to decrease. These trends are demonstrated in the charts on page four and page five. The decrease in ROH funding is dramatic and while the RA/TA funding has risen more gradually, estimates are for a marked increase in FY 1989.

Of interest over the eight year period from 1982 - 1989 is the growth of the "Other" category. It is in this segment that Intermediate Maintenance Activities (IMAs) are funded. This includes tenders (AD/AS) and the Shore Intermediate Maintenance Activities (SIMAs). The Council is concerned that the growth of SIMA funding and manning presages a further reduction in work screened for accomplishment in private shipyards.

The change in Navy maintenance management philosophy is clearly depicted in the private yard chart on the bottom of page five. In 1982, private yards performed only 57 availabilities. By 1989, the policy of selected and phased maintenance will be fully implemented, and the private sector will be accomplishing over twice as many availabilities as in 1982. The difference in the number of availabilities accomplished in the public and private sectors is due to the fact that the Navy yards undertake the long, expensive overhauls and SRAs on nuclear carriers, submarines and cruisers as well as other large complex surface combatants. This work accounts for slightly less than one third of the availabilities each year but requires two thirds of all of the appropriated repair funds to accomplish.

The business base of the private sector shipyards is primarily non-nuclear surface ship repair and modernization. The two private nuclear capable shipyards do some repairs to nuclear submarines, and Newport News Shipbuilding is planning now for the refueling overhaul on USS ENTERPRISE which is a massive undertaking. However, on a day to day basis, non-nuclear surface ships provide the vast majority of our business base. We anticipate that this will continue without change.

Perhaps the most critical issue facing the industry as we look to the future is the split between Navy yards and the private sector in the years to come. There now exists an overcapacity in non-nuclear ship repair while a looming under capacity in nuclear repair and modernization is predicted for the early 1990s and beyond. One way to ameliorate this impending imbalance would be to close or reduce the number of production workers at the Navy's two non-nuclear capable yards and utilize those billets to enlarge the nuclear repair capacity. Congress and the Navy must also recognize that the private nuclear yards are as much a national asset as a Navy nuclear capable repair yard and ensure that their repair capability is maintained by a steady flow of work just as is done for their own yards.

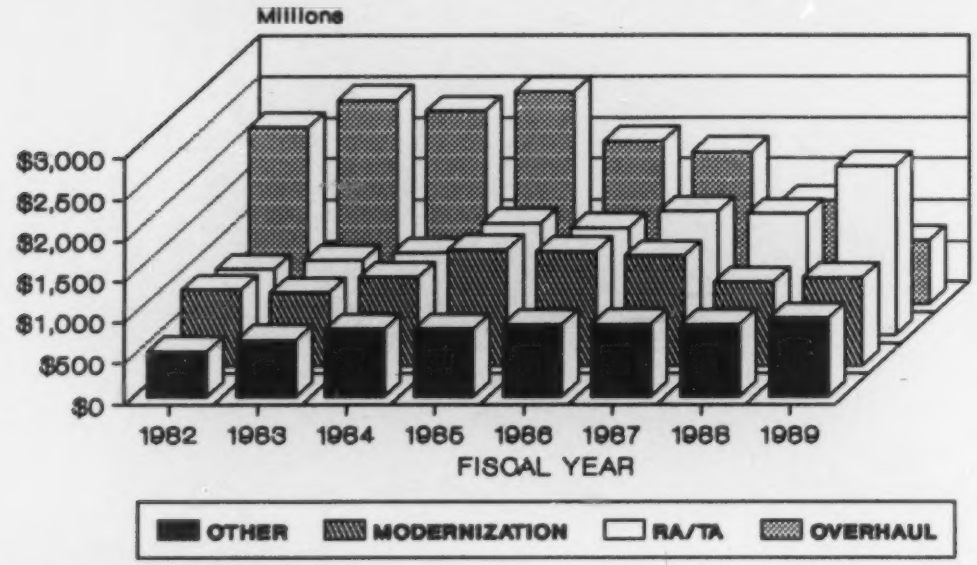
In like manner, Congress must also recognize the requirement to maintain the non-nuclear shipbuilding and ship repair base. Page 12 of this report shows the variations in shipyard employment in the four geographic locations around the country. The 1982 index is keyed to employment at the 110 private yards included in the Navy/MARAD Shipyard Mobilization Base (SYMBA) study. It appears from this data that the West Coast has been the hardest hit area. However, the relatively small number of employees on the Great Lakes was skewed upward by construction of the three Sea-Land containerships. Now that those ships have been delivered, we expect the Great Lakes index to be at or below the West Coast index.

As long as the Navy and the Congress continue to ignore mobilization base issues and think only of providing a full workload for the eight Naval shipyards, the downward trend of the private sector will continue, particularly if defense budgets decline as predicted. The continuing loss of private sector shipyards is not in our national interest and the trend must be reversed.

PRIVATE SHIPYARDS HOLDING CONTRACTS FOR NAVY OVERHAULS AND MAJOR REPAIR AVAILABILITIES JANUARY 1, 1988

1. Todd, Seattle
2. Northwest Marine
3. Pacific Drydock
4. Continental Maritime, SF
5. Service Engineering
6. Southwest Marine, SF
7. Southwest Marine, SP
8. Todd, San Pedro
9. National Steel
10. Campbell Industries
11. Arcwel Corp.
12. Continental Maritime, SD
13. Southwest Marine, SD
14. Honolulu Shipyard
15. Bath Iron Works
16. General Ship
17. Robert E. Derecktor
18. G. Marine Diesel
19. Penn Ship
20. Jonathan Corp.
21. Moon Engineering
22. Norfolk Shipbuilding
23. Metro Machine
24. Newport News
25. Marine Hydraulics
26. Detyens Shipyards
27. Atlantic Drydock
28. Runyan Machine
29. ADDSCO Industries
30. Ingalls Shipbuilding
31. Avondale Industries

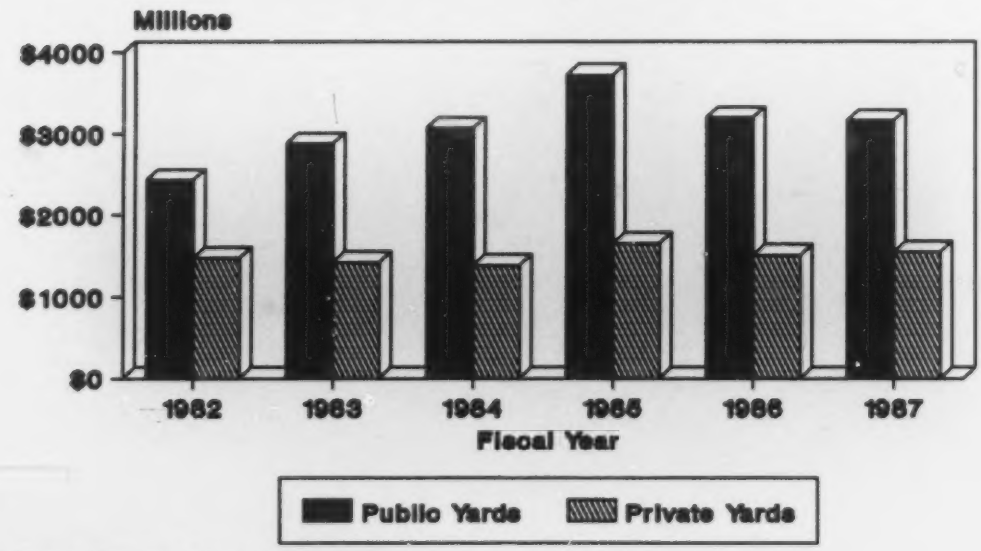
DISTRIBUTION OF NAVY REPAIR DOLLARS



Other includes intermediate maintenance, technical support, outfitting, berthing & messing and inactivations.

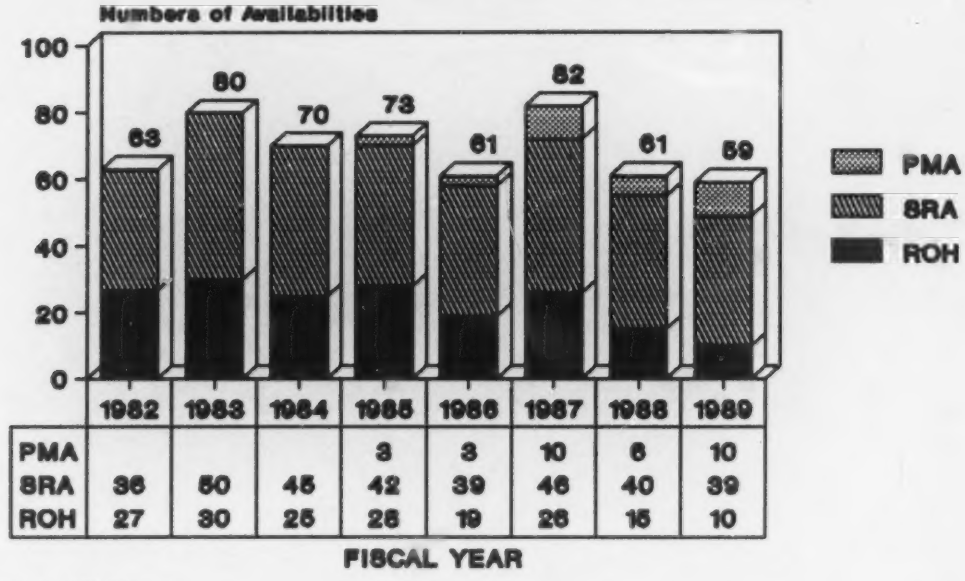
Source: US Navy

DISTRIBUTION OF NAVY REPAIR DOLLARS
Public Yards vs. Private Yards



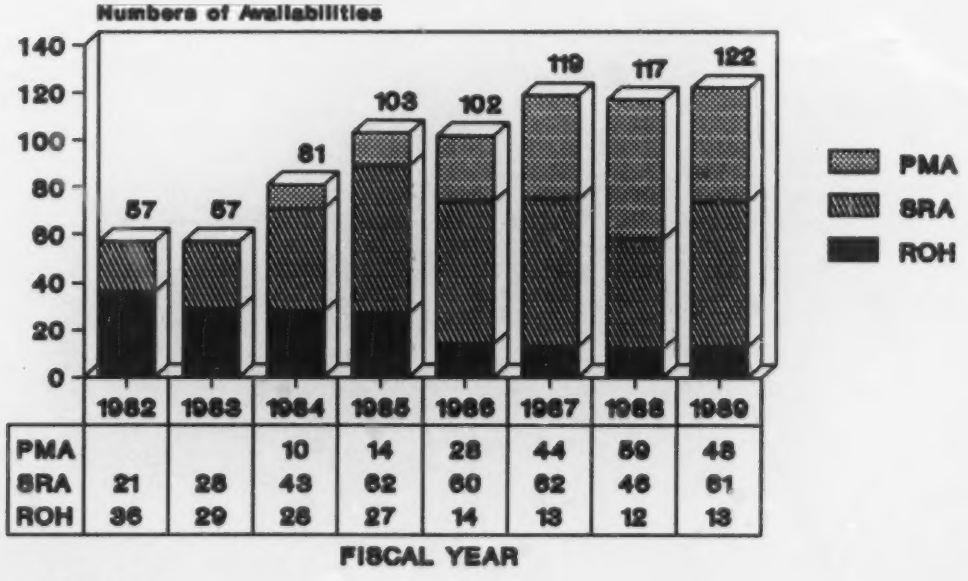
Does not include Other categories.
Source: US Navy

DISTRIBUTION OF REPAIR AVAILABILITIES
PUBLIC YARDS



Source: US Navy

DISTRIBUTION OF REPAIR AVAILABILITIES
AT PRIVATE YARDS



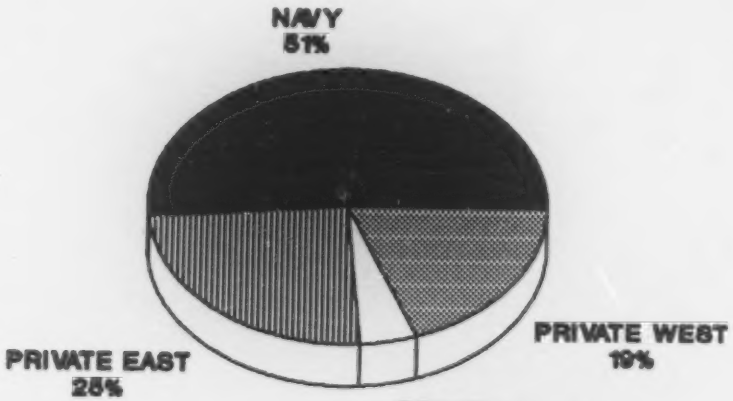
Source: US Navy

DISTRIBUTION OF REPAIR AVAILABILITIES

The historical distribution of availabilities shown below and on the next page demonstrate how thoroughly the eight Naval shipyards dominate the business base. For example, over half of all ROHs have been accomplished in Navy yards as have forty-eight percent, or almost half of all Selected Restricted Availabilities. Only in the relatively new area of Phased Maintenance has the private sector gained an edge. This is to be expected since the program was initiated using auxiliary and amphibious type ships, normally a strong part of the business base for the private sector.

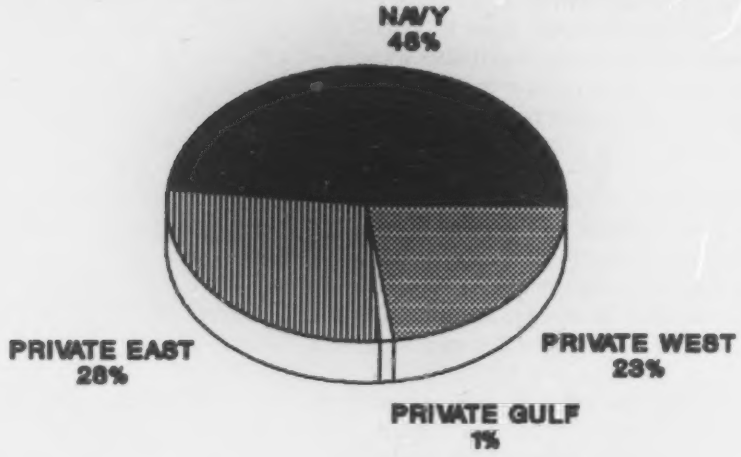
These graphs, which represent the distribution of 302 Regular Overhauls, 534 SRAs and 115 PMAs during a six year period further demonstrate the shift from regular overhauls to Phased or Selected Availabilities. For example, ROHs dropped from sixty-three in FY 1982 to thirty-nine in FY 1987. All but one of the decrease was absorbed by the private sector. In addition, private sector overhauls are primarily concentrated in the low end of the cost spectrum with heavy emphasis on reserve minesweepers and frigates. On the other hand, SRAs accomplished in the private sector tripled during the six year period, from twenty-one to sixty-two while the SRAs accomplished in Navy yards rose only twenty-eight percent over the period. Data for these charts and tables was extracted from U.S. Navy data.

ROH AVAILABILITIES FROM FY 1982 - FY 1987



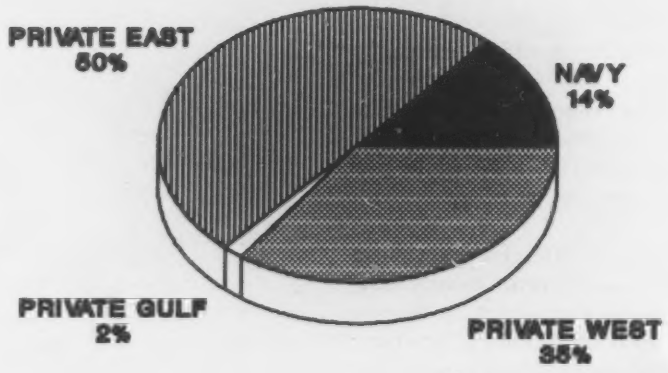
	NAVY	EAST	GULF	WEST
NUMBER OF ROHs	155	75	14	58

SRA AVAILABILITIES FROM FY 1982 - FY 1987



	NAVY	EAST	GULF	WEST
NUMBER OF SRAs	258	149	6	121

PMA AVAILABILITIES FROM FY 1982 - FY 1987



	NAVY	EAST	GULF	WEST
NUMBER OF PMAs	16	57	2	40

PUBLIC/PRIVATE COMPETITION

In general, the repair and maintenance of U.S. Navy ships are either assigned to the public (Naval) shipyards or awarded to private shipyards. Since 1974, public shipyards have been allocated approximately 70% of the Navy ship maintenance and modernization dollars while private shipyards have competed with each other for the remaining 30%. Congress initiated this process in fiscal year 1974 when it placed a 70% ceiling on the value of appropriations that could be allocated to public shipyards for ship maintenance and modernization. The Navy has adhered to this Congressional intent as can be seen in the table on page 4.

The allocation method was slightly altered by Congress in fiscal year 1985. Through congressional legislation, funds were made available for two or more vessels to be competed between public and private shipyards. The Navy complied with this direction and initiated a test program which involved two ships. The overhaul of USS DULUTH (LPD-6) was competed on the West coast between public and private sectors, and Northwest Marine Iron Works was declared the winner. In order to compare costs, a similar overhaul of the CLEVELAND (LPD-7) was assigned to Long Beach Naval Shipyard.

In FY 1986, the Navy expanded the competition program. Since that time, 40 U.S. Navy ships have been competed between the public and private sectors. Awards to date total $882 million. Naval shipyards have won 17 repair availabilities at the announced value of $652.3 million or 74% of the total while private shipyards received 23 awards valued at $229.7 million which equates to 26%. Naval shipyards have won most of the nuclear submarine repair availabilities while the private sector has won most of the non-nuclear surface ship repair work.

On March 3, 1988, in testimony before the Seapower Subcommittee of the House Armed Services Committee, VADM William H. Rowden, Commander, Naval Sea Systems Command, stated that FY 1986 and FY 1987 public/private programs both equated to 10.2% of the budgets for ship maintenance and modernization. The FY 1988 program, he stated "includes 20 availabilities-5 overhauls, 2 extended refit periods, 8 DSRAs and 5 SRAs." This equates to 5.2% of the FY 1988 ship maintenance and modernization budget. It should be noted that since that statement one other public/private candidate, USS SAMPLE (FF-1048) SRA has been dropped from the competition and is now a candidate for decommissioning.

The Shipbuilders Council supports the competition of ships between public and private shipyards and would prefer that the Navy open up the competition to include more ship types in larger numbers than has been the case to date. If, as Navy officials claim, the public/private competition process has saved the taxpayers $200 million, the prudent course to follow would be to expand the number of candidates for competition.

While the Council fully supports competition, we are still concerned that true costs be portrayed when comparing public to private sector bids. On March 25, 1988, the General Accounting Office (GAO) released a report assessing the competition of ships between the public and private sectors. The report was requested by several members of Congress over two years ago.

GAO found that "inherent differences preclude public and private shipyards from competing on an equal footing." GAO identified two cost elements, namely the full costs associated with civilian shipyard employees' retirement and a pro rata share of the costs of the Navy supply system which should be added to the public shipyards' proposals. GAO recommended that the Secretary of Defense should "direct" the Secretary of the Navy to base the certification of public and private shipyard competitive proposals on the proposal prices and "all other costs to the federal government that can be reasonably and objectively identified" and to solicit and evaluate proposals and award competed work on that basis.

The candidates for public/private competition for FY 1989 have not been finalized by the Navy at this time. Five FY 1988 public/private repair availabilities remain to be awarded as of June 1, 1988. The following tables summarize the competition to date and list all of the ships competed since FY 1986.

Public/Private Repair Availabilities
Summary

FY 86 - FY 88

No. of Public	Millions ofDollars		No. of Private	Millions of Dollars
14	622.9	Submarines	4	35.2
3	29.4	Surface Ships	19	194.5
17	$ 652.3	Totals	23	229.7

Unawarded as of June 1, 1988

1 Submarine
4 Surface Ships

Public/Private Repair Availabilities

Name	Hull No.	Avail	Shipyard	Performance Dates	$ Millions
FY 1986					
SUBMARINES					
BEN FRANKLIN	SSBN-640	ROH	Charleston NSYD	7/25/86 - 5/25/88	$ 111.9
GEORGE BANCROFT	SSBN-643	ROH	Charleston NSYD	6/02/86 - 4/01/88	112.2
				Total	$ 224.1
SURFACE SHIPS					
MAHAN	DDG-42	ROH	Metro Machine	9/29/86 - 7/29/87	$ 13.8
L.Y. SPEAR	AS-36	ROH	NORSHIPCO	8/29/86 - 6/29/87	18.4
ALBERT DAVID	FF-1050	ROH	NASSCO	9/29/86 - 9/25/87	14.6
O'CALLAHAN	FF-1051	ROH	Todd, Seattle	9/29/86 - 9/25/87	16.6
FLETCHER	DD-992	ROH	Long Beach NSYD	9/29/86 - 10/02/87	22.7
FORT FISHER	LSD-40	ROH	Lockport Marine	9/29/86 - 5/29/87	15.4
CLIFTON SPRAGUE	FFG-16	DSRA	Philadelphia NSYD	9/25/86 - 5/08/87	5.1
JARRETT	FFG-33	SRA	Long Beach NSYD	6/24/86 - 10/03/86	1.6
JOHN A. MOORE	FFG-19	DSRA	SW Marine	9/15/86 - 2/05/87	6.0
				Total	$ 114.2

FY 1987

SUBMARINES

LAFAYETTE	SSBN-616	ERP	Portsmouth NSYD		$ 6.4
A. HAMILTON	SSBN-617	ROH	Puget Sound NSYD	11/30/86 - 11/30/88	110.7
KAMEHAMEHA	SSBN-642	ROH	Portsmouth NSYD	11/30/86 - 11/30/88	112.1
WOODROW WILSON	SSBN-624	ROH	Charleston NSYD	7/30/87 - 5/30/89	120.9
LAPON	SSN-661	DSRA	Norfolk NSYD	6/15/87 - 8/18/87	2.7
AUGUSTA	SSN-710	DSRA	Portsmouth NSYD	5/22/87 - 7/20/87	5.7
NORFOLK	SSN-714	DSRA	Norfolk NSYD	8/05/87 - 10/20/87	3.2
PROVIDENCE	SSN-719	DSRA	GD, Electric Boat	9/30/87 - 11/20/87	6.1
				Total	$ 367.8

SURFACE SHIPS

BRUMBY	FF-1044	ROH	Bath Iron Works	9/01/87 - 9/01/88	$ 14.5
P.F. FOSTER	DD-964	ROH	Northwest Marine	7/01/87 - 7/01/88	26.4
TRIPPE	FF-1075	ROH	General Ship	9/15/87 - 5/16/88	8.8
SANTA BARBARA	AE-28	SRA	Metal Trades	5/04/87 - 8/31/87	2.2
FARRAGUT	DDG-37	SRA	Norshipco	4/27/87 - 9/22/87	2.5
COONTZ	DDG-40	SRA	Metro Machine	9/09/87 - 12/23/87	1.6
PRAIRIE	AD-15	DSRA	Southwest Marine	9/14/87 - 2/19/88	7.2
				Total	$ 63.2

FY 1988

SUBMARINES

LEWIS AND CLARK	SSBN-644	ERP	Newport News		$ 10.8
GEORGE MARSHALL	SSBN-654	ERP	Newport News		11.2
JOHN MARSHALL	SSN-611	DSRA	Norfolk NSYD	2/08/88 - 4/11/88	13.8
BATON ROUGE	SSN-689	DSRA	Norfolk NSYD	9/30/88 - 11/30/88	5.5
PHILADELPHIA	SSN-690	DSRA	Portsmouth NSYD	9/01/88 - 11/01/88	5.4
MEMPHIS	SSN-691	DSRA	Unawarded	8/11/88 - 10/12/88	
CORPUS CHRISTI	SSN-705	DSRA	Portsmouth NSYD	1/18/88 - 3/18/88	6.4
ALBUQUERQUE	SSN-706	DSRA	Portsmouth NSYD	6/13/88 - 8/12/88	6.0
PITTSBURGH	SSN-720	DSRA	Newport News	3/17/88 - 5/17/88	7.1
				Total as of 6/01/88	$ 66.2

SURFACE SHIPS

A. W. RADFORD	DD-968	ROH	Avondale	5/16/88 - 5/16/89	$ 20.8
O'BRIEN	DD-975	ROH	Unawarded	7/11/88 - 7/14/89	
KNOX	FF-1052	ROH	Unawarded	8/29/88 - 2/17/89	
STEIN	FF-1065	ROH	Southwest Marine	4/25/88 - 11/01/88	9.1
BOWEN	FF-1079	ROH	Metro Machine	2/15/88 - 10/14/88	6.9
ROBERT E. PEARY	FF-1073	SRA	Unawarded	7/25/88 - 9/30/88	
HAROLD E. HOLT	FF-1074	SRA	Unawarded	6/27/88 - 9/02/88	
OUELLET	FF-1077	SRA	Honolulu Shipyard	3/14/88 - 5/13/88	1.6
ESTOCIN	FFG-15	SRA	Philly Ship	2/02/88 - 5/02/88	3.8
CROMMELIN	FFG-37	DSRA	Todd, San Pedro	5/30/88 - 9/23/88	4.3

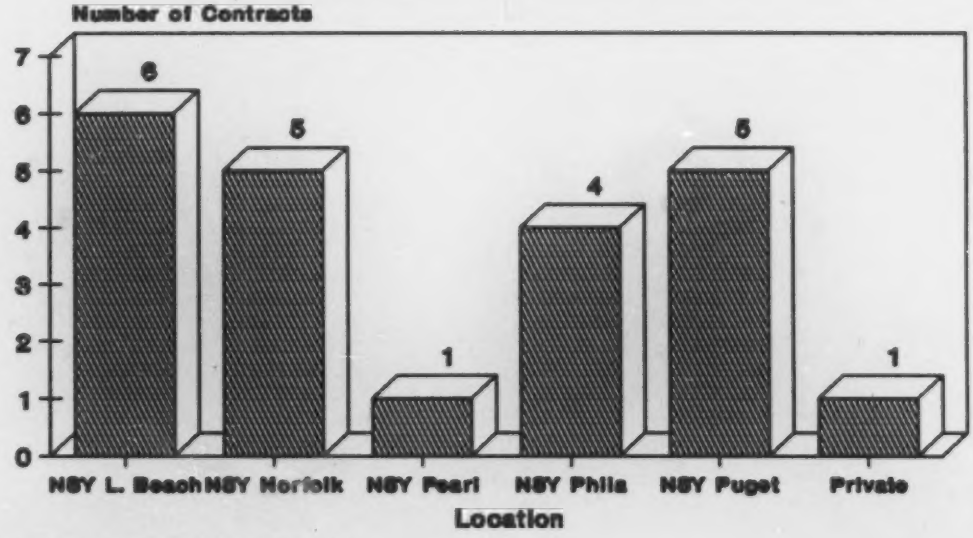
New Threat Upgrade (NTU) Issues

Not since the days of the debate over the aircraft carrier service life extension program (CV SLEP) has a program been the subject of more controversy between the public and private ship repair sectors than that of the New Threat Upgrade (NTU) program. This effort upgrades the radars, computers, processing and display equipment on thirty-one guided missile cruisers and destroyers to permit them to acquire targets, process information and destroy anti-ship missiles which have been developed since these combat systems were designed in the 1950s and 1960s.

The Navy originally planned to do all of these NTU modernizations in Naval shipyards. As the program has unfolded, twenty-one are now scheduled for Navy yards, nine for public/private competition (three in the Atlantic/Gulf area and five in the Pacific) and one, the USS RICHMOND K. TURNER (CG-20), was competed in the private sector and was won by Ingalls Shipbuilding, Inc.

Congressional interest has been high in this division of work. These contracts represent workload for both public and private shipyards in an era when federal budgetary constraints present real problems in balancing available fiscal resources with the amount of repair work needed to keep the fleet at sea. As a result, there is continual interest in whether or not the ships will be allocated to Naval shipyards or will be subjected to competition between Naval yards and private yards. Since Naval yards, in general, fear that they cannot win competitively awarded NTUs, they seek allocation of the work. This allocation process will have the effect of exacerbating budgetary problems since allocation to Naval yards has always led to higher costs rather than the lower costs generated by a competitive process. The private sector will continue to insist that this workload be competed, since it is likely that budgetary problems will persist into the future and the cost of performing these repairs will be lower in the private sector. Thus, the Navy's much needed maintenance can be accomplished within the fiscal constraints of the future.

DISTRIBUTION OF NTU CONTRACTS SCHEDULED FOR ASSIGNMENT OR COMPETITION

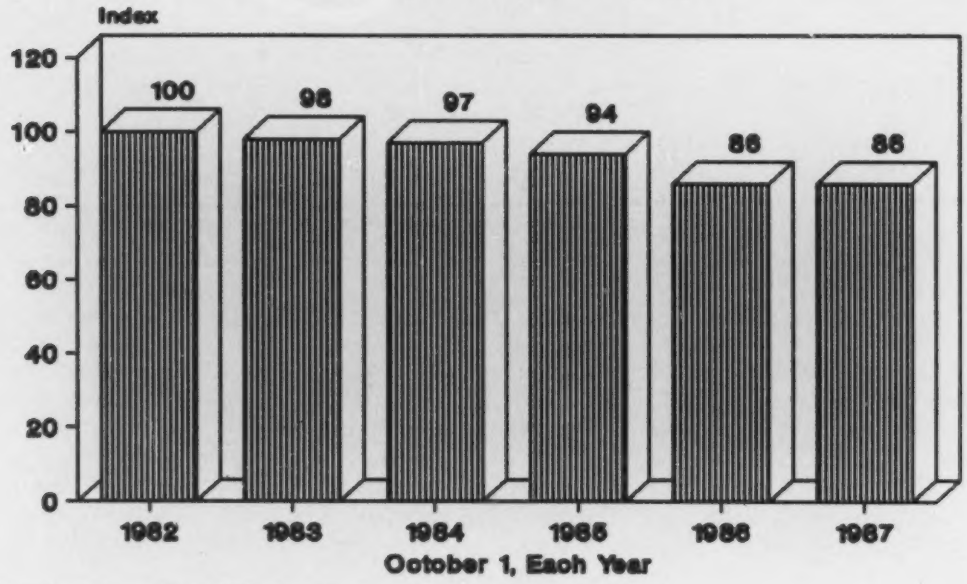


Note: Nine additional NTUs to be competed between public and private sectors.

Source: US Navy

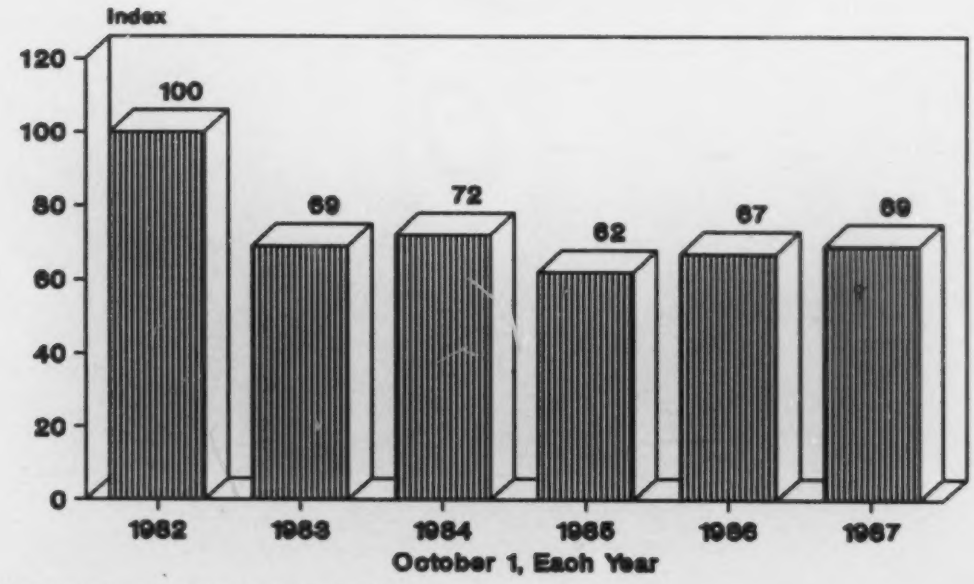
GEOGRAPHIC EMPLOYMENT INDICES
(1982 = 100)

East Coast SYMBA Yards



SYMBA: Shipyard Mobilization Base

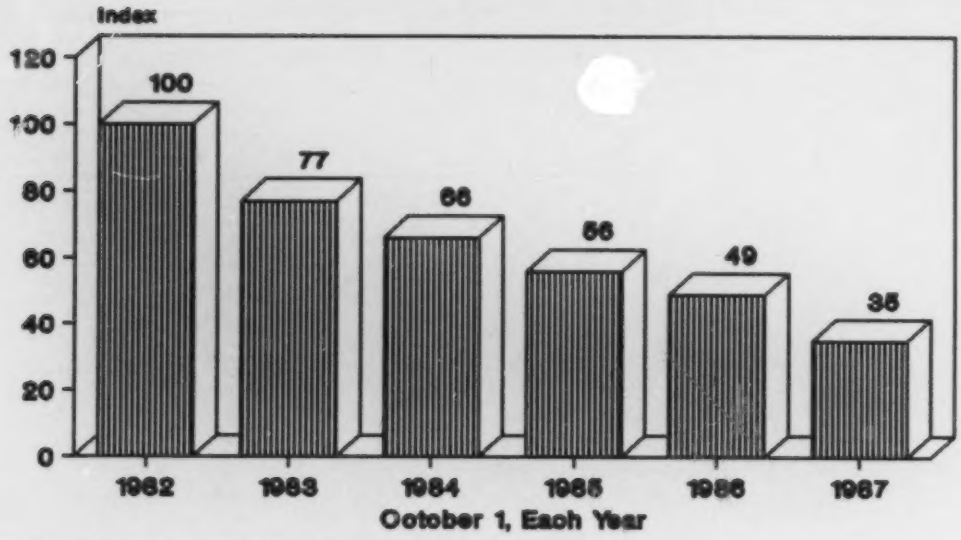
Gulf Coast SYMBA Yards



SYMBA: Shipyard Mobilization Base

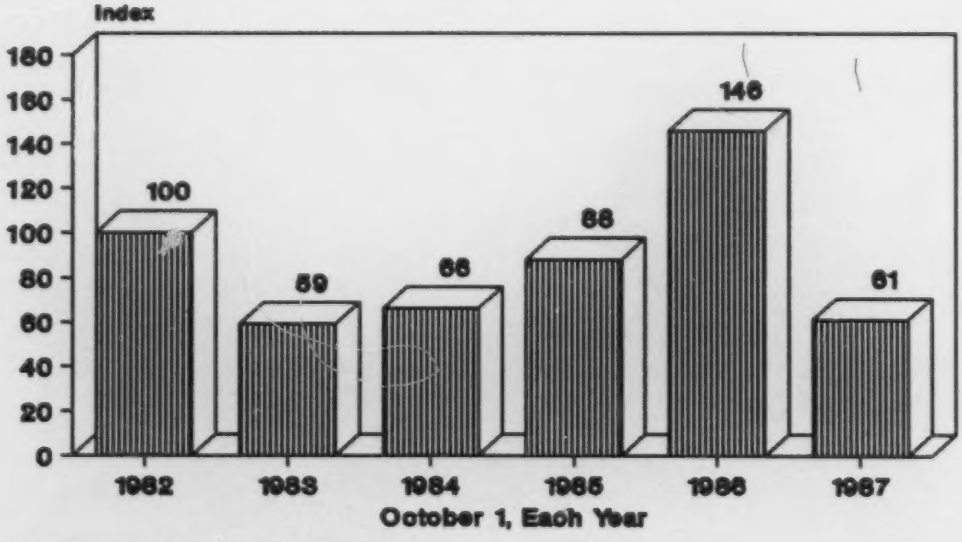
GEOGRAPHIC EMPLOYMENT INDICES
(1982 = 100)

West Coast SYMBA Yards



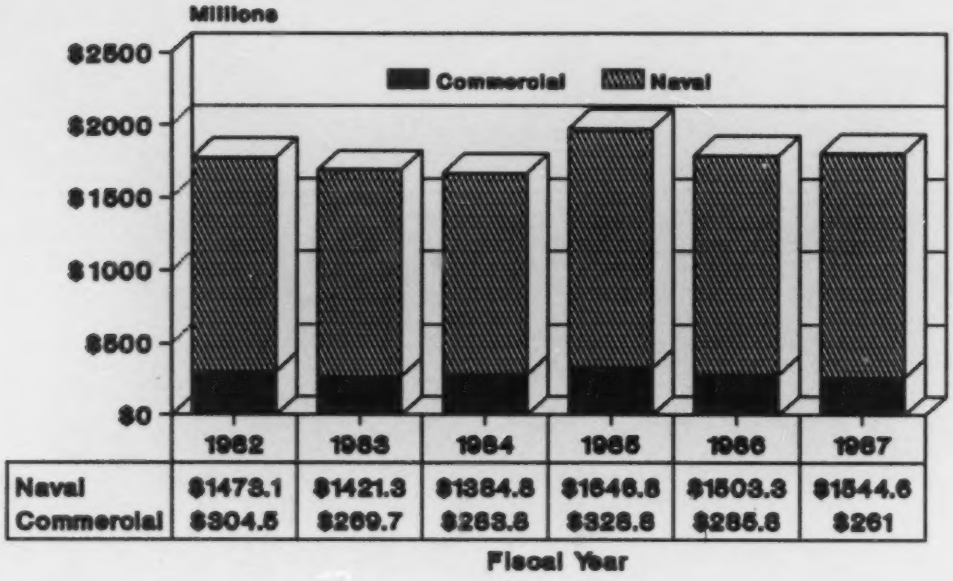
SYMBA: Shipyard Mobilization Base

Great Lakes SYMBA Yards



SYMBA: Shipyard Mobilization Base

COMPARISON OF COMMERCIAL AND NAVY SHIP REPAIR CONTRACT VALUES



COMMERCIAL REPAIR DOLLAR DISTRIBUTION FOR 1987 BY TYPE AND FLAG

Ship Type	Total	U.S. Flag	Foreign Flag
Tanker	$ 64,214,000	$ 57,380,000	$ 6,834,000
Bulk/OBO	36,113,000	24,703,000	11,410,000
Containership	19,676,000	16,114,000	3,562,000
Barge Carrier	5,817,000	5,817,000	-
Break/Bulk	18,569,000	18,184,000	385,000
Passenger	53,327,000	3,647,000	49,680,000
Other	63,380,000	54,709,000	8,671,000
TOTAL	$ 261,096,000	$ 180,554,000	$ 80,542,000

MEMBERS & STAFF

REGULAR MEMBERS

ADDSCO Industries, Inc.
Mobile, AL

The American Ship Building Company
Tampa, FL

Avondale Industries, Inc.
New Orleans, LA

Bath Iron Works Corporation
Bath, ME

Bethlehem Steel Corporation
Bethlehem, PA

Capital Marine Corporation
Chester, PA

Continental Maritime Industries, Inc.
San Francisco, CA

General Dynamics Corporation
St. Louis, MO

General Ship Corporation
East Boston, MA

Ingalls Shipbuilding, Inc.
Pascagoula, MS

Jacksonville Shipyards, Inc.
Jacksonville, FL

The Jonathan Corporation
Norfolk, VA

Marinette Marine Corporation
Marinette, WI

McDermott Corporation
New Orleans, LA

Metro Machine Corporation
Norfolk, VA

National Steel & Shipbuilding Company
San Diego, CA

Newport News Shipbuilding
Newport News, VA

Norfolk Shipbuilding & Drydock Corporation
Norfolk, VA

Northwest Marine Iron Works
Portland, OR

Peterson Builders, Inc.
Sturgeon Bay, WI

Robert E. Derecktor of Rhode Island, Inc.
Middletown, RI

Southwest Marine, Inc.
San Diego, CA

Textron Marine Systems
New Orleans, LA

Todd Shipyards Corporation
Seattle, WA

ALLIED INDUSTRIES MEMBERS

ALCOA/TRE
Santa Ana, CA

Bird-Johnson Company
Walpole, MA

Colt Industries, Inc.
Washington, DC

Combustion Engineering, Inc.
Windsor, CT

Dresser Pump Division
Dresser Industries, Inc.
Harrison, NJ

Eaton Corporation
Cutler-Hammer Products
Ashton, MD

General Electric Company
Washington, DC

Hopeman Brothers, Inc.
Waynesboro, VA

IMO Delaval, Inc.
Lawrenceville, NJ

Jamestown Metal Marine Sales, Inc.
Boca Raton, FL

Jered Brown Brothers, Inc.
Troy, MI

Lake Shore, Inc.
Iron Mountain, MI

MacGregor-Navire (USA), Inc.
Cranford, NJ

Raytheon Service Company
Arlington, VA

Sperry Marine, Inc.
Aerospace & Marine Group
Charlottesville, VA

Westinghouse Electric Corporation
Sunnyvale, CA

York International Corporation
York, PA

AFFILIATE MEMBERS

The Bingham Group
Arlington, VA

McLean Contracting Company
Baltimore, MD

PacOrd, Inc.
National City, CA

Poten & Partners, Inc.
New York, NY

Seacoast Electric Supply Corporation
Rye, NY

NAVAL ARCHITECT MEMBERS

Gibbs & Cox, Inc.
New York, NY

JJH Inc.
Cherry Hill, NJ

John J. McMullen Associates, Inc.
New York, NY

M. Rosenblatt & Son, Inc.
New York, NY

ASSOCIATION MEMBERS

New York and New Jersey Dry
Dock Association
Brooklyn, NY

South Tidewater Association of
Ship Repairers, Inc.
Chesapeake, VA

STAFF

John J. Stocker
President

W. Patrick Morris
Vice President & General Counsel

Silas O. Nunn
Vice President, Programs

Beverly C. Kendall
Secretary & Treasurer

Cynthia L. Brown
Director, Legislative Programs

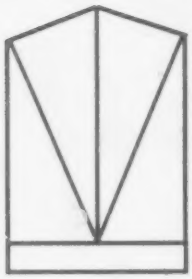
William G. Kurfehs
Director, Ship Repair Programs

Amy L. Beissner
Manager, Data Systems & Analysis

A8700-43F(4)

Shipbuilders
Council of
America

1987 IN REVIEW



MANPOWER AND LABOR ISSUES REPORT

This publication is the third of a series of quarterly statistical reports to be issued by the Shipbuilders Council of America, which will analyze the following issues on an annual basis. The schedule set for these reports is as follows:

March:	New Construction
June:	Ship Repair
September:	Manpower and Labor Issues
December:	Contracts/Financial

Shipbuilders Council of America
1110 Vermont Avenue, NW
Washington, DC 20005-3553

202-775-9060

OVERVIEW

This report on Manpower and Labor Issues represents the first attempt by the Shipbuilders Council of America to understand the dynamics of our production work force. It is the production work force that is really the backbone of our industry. Not only are the demographics of the labor force important, but changes in the composition of the work force dramatically highlight the policy issues that underlie the industry's condition. Thus the demographic analysis confirms some views about the work force and challenges long-held notions, particularly about the "aging" of the work force. The industry is an employer of minorities, in excess of the proportion of minorities to the total population. Therefore, the shipbuilding and ship repair industry is providing an important segment of the population with skills that make it likely that they can be retained for a lifetime of productive labor. This lifetime of opportunity can only be assured if the current production capacity is not allowed to erode further.

The labor force is not aging as rapidly as the total population and this fact challenged our long-held view that the work force was creeping toward retirement. In fact, fully one-third of labor is in the 30-39 year age group. Furthermore, the work force is slightly more educated than the standard for the population as a whole; another indicator of the industry's need for a technologically-based labor component.

Demographics aside, the remainder of the report presents a picture of a troubled industry trying to maintain its unique labor capability. For example, there are critical skill shortages and these shortages have existed in some shipyards for the past 18 months. Fully, 50 percent of the sample were reporting shortages in marine electricians, sheet-metal workers, and machine welders.

In the area of comparative wage rates, it is clear that American shipyards have worked diligently to maintain labor costs within reasonable bands of growth. This has largely been in response to competitive pressures within the domestic market. But, it also demonstrates that American yards could be more competitive in the international market. In virtually every case around the world, rates have increased in relation to the United States.

Some would argue that rates in South Korea and Taiwan are still substantially below those of the United States and that is certainly true. But, it is also true that there is an argument that the U.S. and South Korea are pursuing different market niches, where, in the construction of technologically complex vessels, lower labor rates can be offset. In addition, current contract difficulties in South Korean shipyards which are unable to produce at the artificially low prices quoted to ship owners, have made it clear that low labor rates are not a guarantor of success. The comparative labor rates also indicate that in high labor cost nations that are still receiving commercial shipbuilding orders (e.g., West Germany), subsidies and government support programs are being used to offset those higher rates. The Council believes that extensive government intervention in the marketplace in Europe and Japan is distorting the international marketplace and is anti-competitive.

Moreover, the data within this report confirms the importance of the Navy as the primary customer of the industry and shows that this dominance of the market has occurred within the last ten years. This is a direct result of the collapse of the commercial market driven by the destruction of the Construction-differential Subsidy program by the Reagan Administration. This policy decision was taken in 1981 without a concurrent commitment to convince our international trading partners to do likewise. As a consequence, instead of being able to take advantage of lower labor rates to create a market niche, the American industry watched innumerable forein government subsidy programs take that niche away from us.

A final note: When current employment statistics are analyzed, it is interesting to see that public shipyard employment has increased since 1982. This has occurred in a time period when the private sector has absorbed severe capacity reductions. Does the country really want the more expensive public sector to survive alone despite statutory obligations that require the Defense Department to rely on the private sector for the provision of defense goods and services?

John J. Stocker
President

SHIPYARD LABOR SURVEY

In order to provide clear up-to-date information on the composition of the work force in the U.S. shipbuilding and ship repair industry, the Council sampled its membership to ascertain the demographic makeup of the production work force. As shown in the following charts, the Council sampled production workers for Race or National Origin, Age, and Education Level. In addition, the shipyards were queried regarding shortages of workers in certain occupations.

The data confirmed a long held view that the industry is an employer and trainer of skills for the economically disadvantaged. Fully one-third of the production work force is nonwhite. In addition while not reported here, but on the basis of data collected, ten percent of the production work force is female. This strongly indicates the role the industry has in training two important segments of American society.

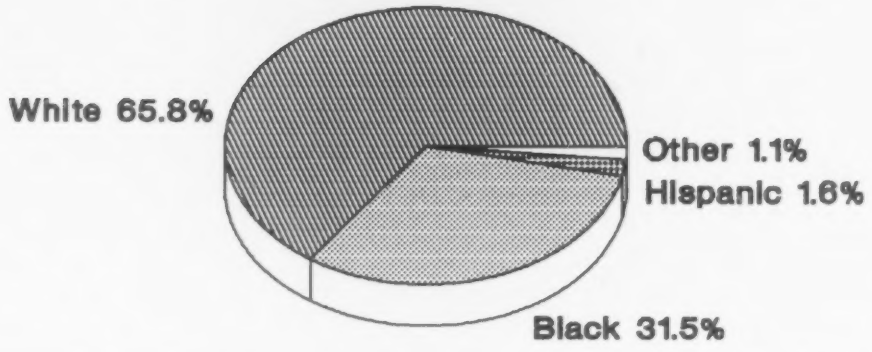
The lack of stable work load is creating a problem in retention of these newly trained workers, particularly when shortages in the skilled occupation groups is examined. The survey included all shipyard skills in the Bureau of Labor Statistics' makeup of production worker categories. As can be seen from the data on page four, 12 of these skilled occupations central to shipbuilding and ship repair were reported in short supply by at least one third of yards responding to the survey. The shortages run the gamut of skill areas but include electronic technicians, machinists, pipefitters, sheet-metal workers, welders and crane operators. Of equal concern is the length of time these shortages have been recorded. Of the 12 occupational skills reported by at least one third of the responding yards, nine of the shortage occupations have existed for an <u>average</u> span of over a year. As a result, this data will be closely monitored in future years to examine trends in either the number of occupations reporting shortages or in the length of time the shortages have existed. While most managers in the industry have been aware of shortages in certain skills in individual yards, this is the first time that the breadth of the problem for the industry has been detailed.

The biggest surprise to the Council was the relatively young age of the work force. A preconceived notion is that in a shrinking industry the work force would tend toward more senior employees, but that clearly is not the case. In fact, only 17.2 percent of production workers are over fifty years of age while over half the total, 52.7 percent, are in the age bracket from 30 to 49 years which would normally be considered the most productive years for skilled labor. While turnover rates were not sampled as a part of our survey, individual yards have stated that the highest turnover rates occur, as expected, in the 29 and under age groupings.

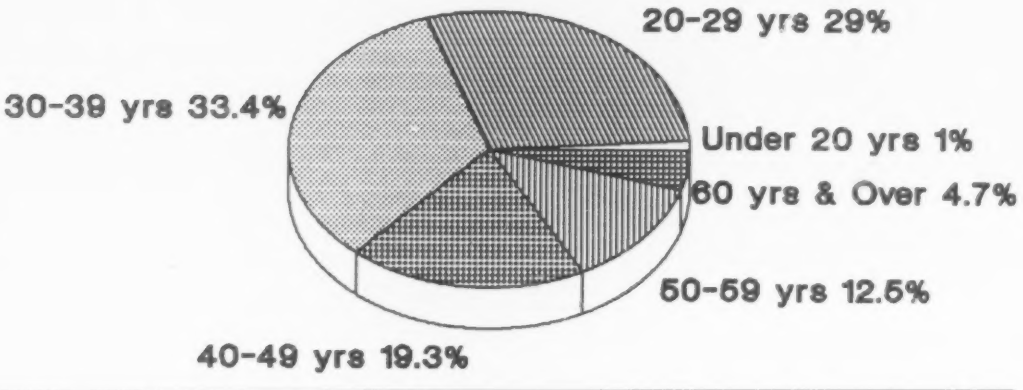
The education level of the production worker population was also a pleasant surprise. When the "other" category is added in, 78 percent of all production workers in the industry hold at least a high school diploma. This compares very favorably with the total U.S. population which the Census Bureau reported at 73.9 percent high school graduates in 1985.

DEMOGRAPHIC DISTRIBUTION OF U.S. PRIVATE SHIPYARD PRODUCTION WORKERS

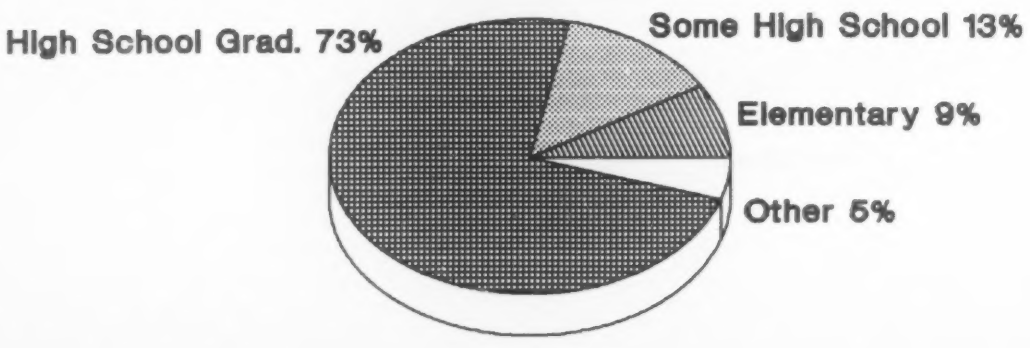
Race or National Origin



Age



Education Level



Note: Other includes 2.6% for shipyard apprentice school, 2.2% for college experience and .2% for trade school.

SKILL SHORTAGES

Survey data is recorded for each occupation noted in short supply. One yard reported shortages in all major skill areas. The average period of shortage reflects the period of time in which the skill shortage has existed. Survey data does not provide any indication as to when shortages are expected to be rectified.

Occupation/Production	Percent of Yards Reporting	Avg. Period of Shortage
Electronic technicians	33	17 months
Inspectors	17	6 months
Insulators	25	12 months
Loftworkers	25	18 months
Machine-tool operators	33	7 months
Machinists, production	42	13 months
Marine electricians	50	15 months
Marine machinists	42	16 months
Marine pipefitters	50	11 months
Marine riggers	25	9 months
Painters	33	6 months
Sheet-metal workers	50	19 months
Shipfitters	42	16 months
Shipwrights	25	9 months
Welders	42	17 months
Welders, machine (arc or gas)	50	17 months
Occupation/Maintenance		
Carpenter, maintenance	17	9 months
Electricians, maintenance	33	13 months
Mechanics, maintenance	25	13 months
Pipefitters, maintenance	25	13 months
Welders	25	9 months
Occupation/Material Movement and Service		
Crane operators	42	11 months
Guards	17	9 months
Forklift operators	17	9 months
Truckdrivers	17	9 months

WORLDWIDE COMPENSATION RATES

The following table and charts indicate clearly that overall compensation for shipyard employees in the United States has declined slightly over the past five years while wages in the rest of the world have risen, and in some cases risen precipitously. These compensation rates include all benefits and of course are factored to account for currency evaluation. The point to be made is that the compensation packages offered to U.S. workers are competitive with a majority of European shipbuilding nations and becoming more competitive with Japan as time passes. This data does not take into account social programs financed by foreign governments, e.g., national health insurance programs in some countries. Thus, the actual comparative labor cost are certainly understated.

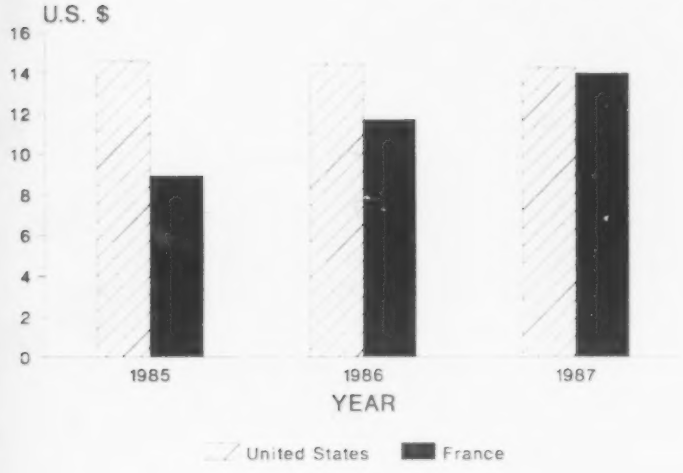
While not shown on these charts, the South Korean wage and benefits package has recently begun to rise rapidly in reponse to the general dissatisfaction of labor with their remuneration. This in turn has caused Korean shipbuilders to recently default on option contracts for newbuildings and in some cases request renegotiation of contracts at up to twice the previous price.

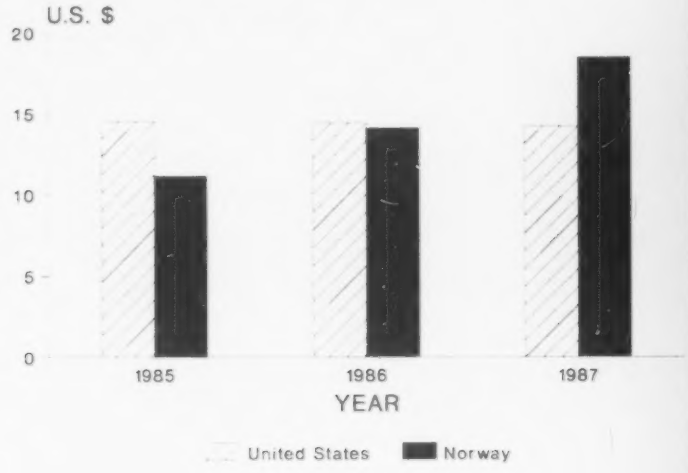
In the final analysis, it would appear that escalating labor rates in Europe are being offset by government subsidy programs since European shipyards continue to receive new orders. The pricing of these new orders can not be solely explained by improved labor productivity in the face of the rates depicted here.

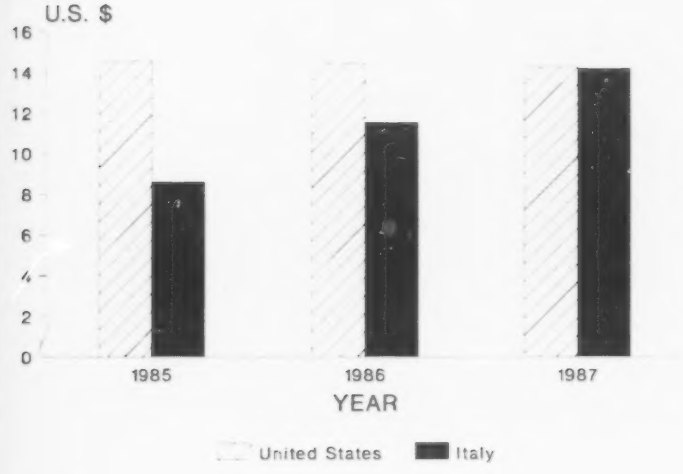
HOURLY COMPENSATION IN U.S. $ FOR SHIPYARD WORKERS WORLDWIDE

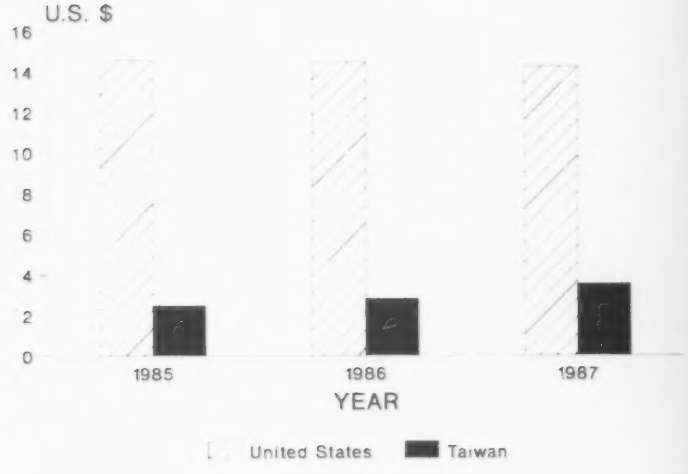
	1982	1983	1984	1985	1986	1987
United States	13.48	13.81	14.21	14.57	14.47	14.26
Canada	11.51	12.56	12.28	11.95	12.08	11.74
Hong Kong	2.34	2.14	2.19	2.34	2.45	2.50
Japan	6.96	7.68	7.76	8.13	11.60	13.00
South Korea	2.08	2.21	2.13	2.19	2.53	2.92
Singapore	2.50	2.88	3.11	3.20	3.08	3.19
Taiwan	2.01	2.20	2.73	2.47	2.80	3.53
Belgium	10.91	10.35	9.78	10.21	13.79	16.48
Denmark	9.56	9.26	8.46	8.62	11.70	15.55
Finland	8.79	8.42	8.79	9.14	12.89	15.67
France	8.95	8.97	8.86	8.92	11.66	13.97
Germany	11.60	11.64	10.68	11.00	15.26	19.35
Greece	4.98	4.61	4.49	4.52	5.08	4.90
Italy	8.32	8.63	8.02	8.58	11.53	14.18
Netherlands	10.02	9.57	8.63	8.61	12.61	15.23
Norway	11.59	11.19	10.90	11.16	14.15	18.50
Spain	6.69	5.69	5.35	5.06	7.74	9.41
Sweden	10.43	9.29	9.56	10.03	12.92	15.57
United Kingdom	6.97	6.47	6.11	6.37	7.73	8.91

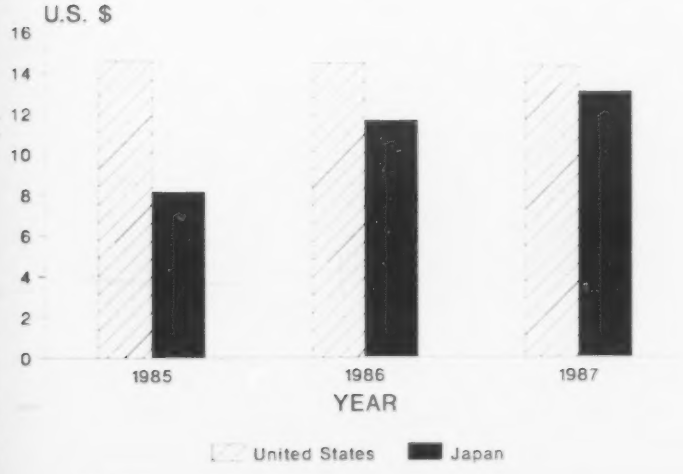
COMPARATIVE LABOR RATES

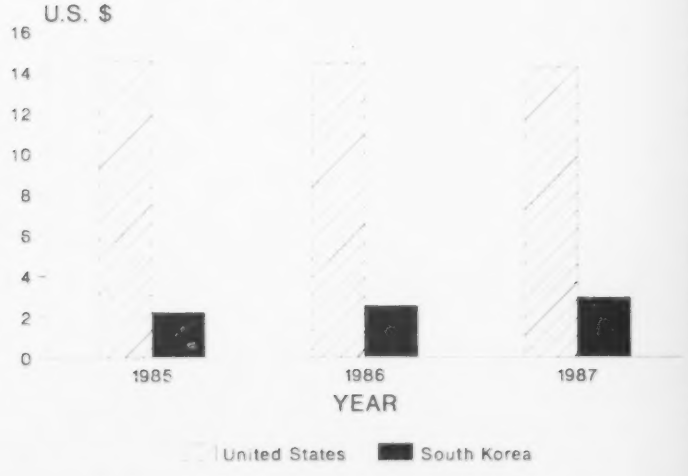




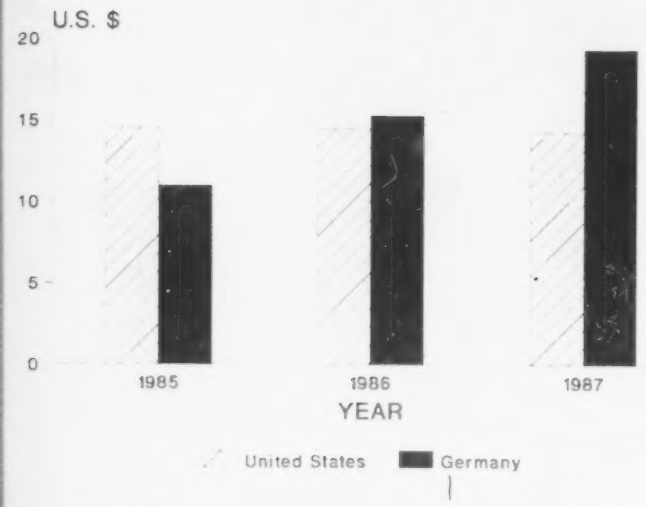


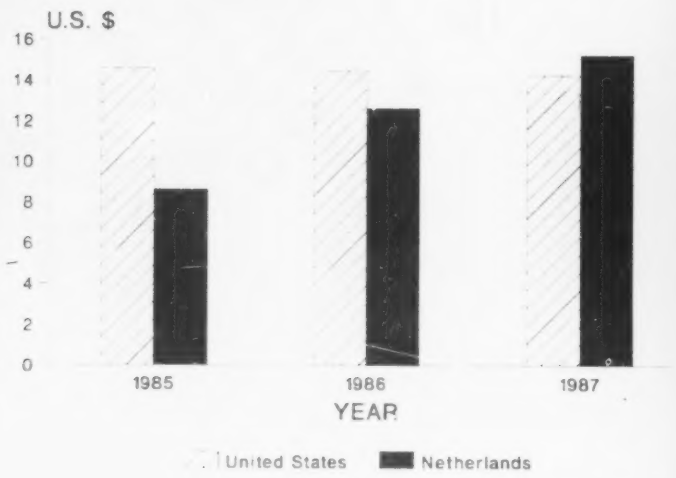


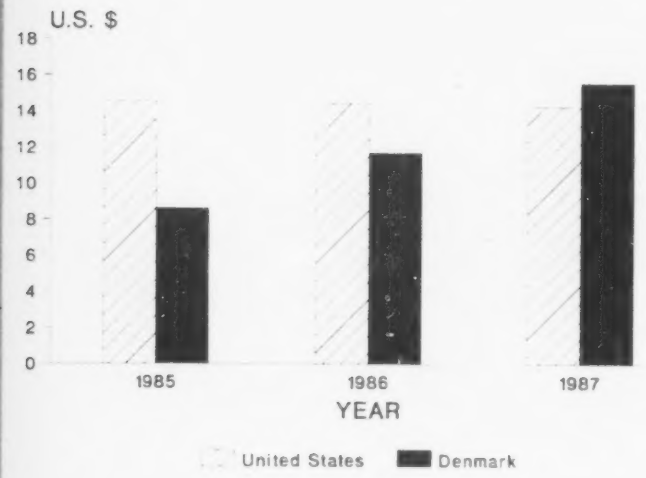


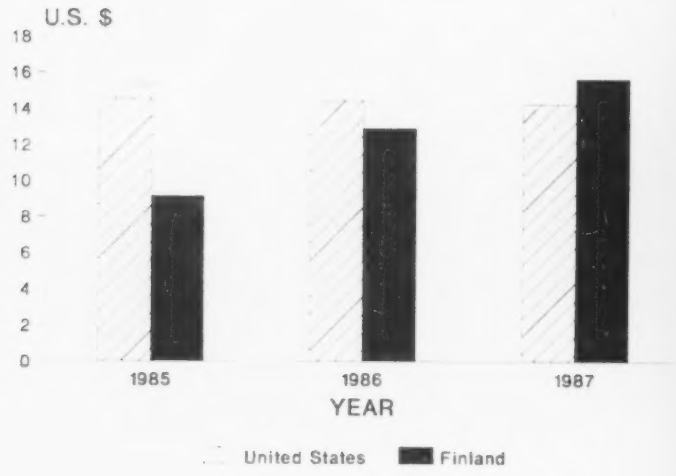


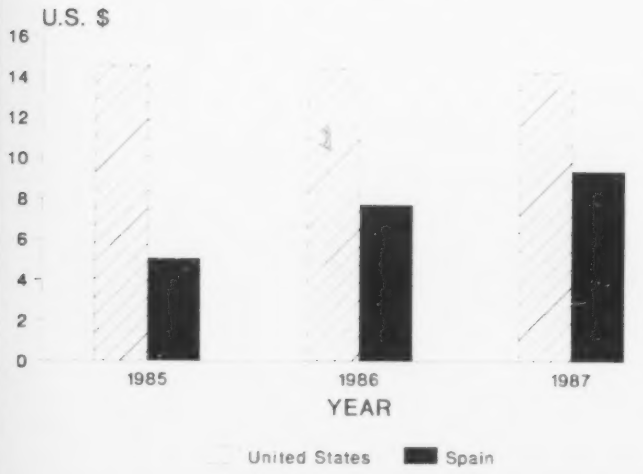
COMPARATIVE LABOR RATES

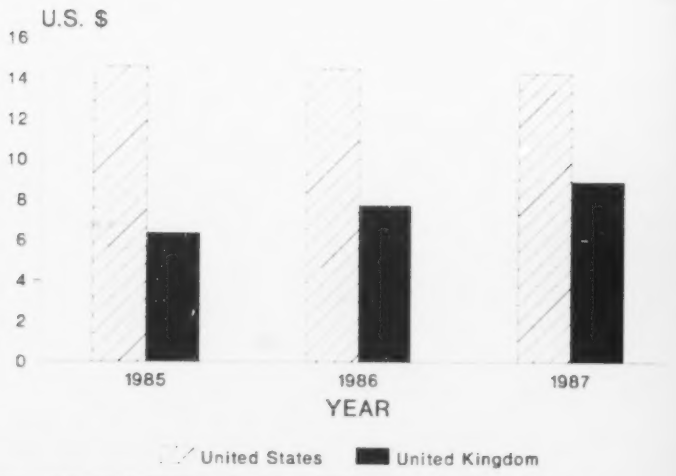












NAVAL SHIPYARD EMPLOYMENT *
As of October 1, Each Year

	1982	1983	1984	1985	1986	1987
East Coast						
Charleston	7,795	8,414	8,329	8,373	8,348	8,557
Norfolk	11,990	13,007	13,388	12,645	12,136	12,502
Philadelphia	9,645	11,535	11,182	10,089	8,708	9,210
Portsmouth	8,062	8,831	8,386	8,422	7,699	8,037
West Coast						
Puget Sound	10,924	12,309	12,404	11,815	11,178	12,201
Mare Island	9,482	10,762	10,013	9,872	9,440	9,763
Long Beach	7,043	7,003	7,083	6,502	5,445	5,875
Pearl Harbor	6,735	7,125	6,854	6,654	6,293	6,218
Totals	71,676	78,986	77,639	74,372	69,247	72,363

* Naval shipyard employment does not include other public sector activities dedicated to Navy ship repair. These other activities include SRFs (Ship Repair Facilities), Trident submarine repair facilities and SIMAs (Shore based Intermediate Maintenance Activities), among others.

SYMBA SHIPYARD EMPLOYMENT **
Private Yards - Total Employment
As of October 1, Each Year

	1982 110 Yards	1983 100 Yards	1984 94 Yards	1985 83 Yards	1986 74 Yards	1987 69 Yards
East Coast	82,040	80,981	80,098	77,067	70,412	70,636
West Coast	30,841	23,909	20,411	17,177	15,092	10,666
Gulf Coast	29,752	20,585	21,568	18,550	19,980	20,450
Great Lakes	2,973	1,782	1,964	2,634	4,347	1,824
Non Conus	585	488	273	559	358	364
Totals	146,191	127,745	124,314	115,987	110,189	103,940

** Employment data reflects changes to the original Shipyard Mobilization Base (SYMBA) as identified by the Navy and Maritime Administration. Original 110 private shipyards were deemed essential for mobilization in 1982.

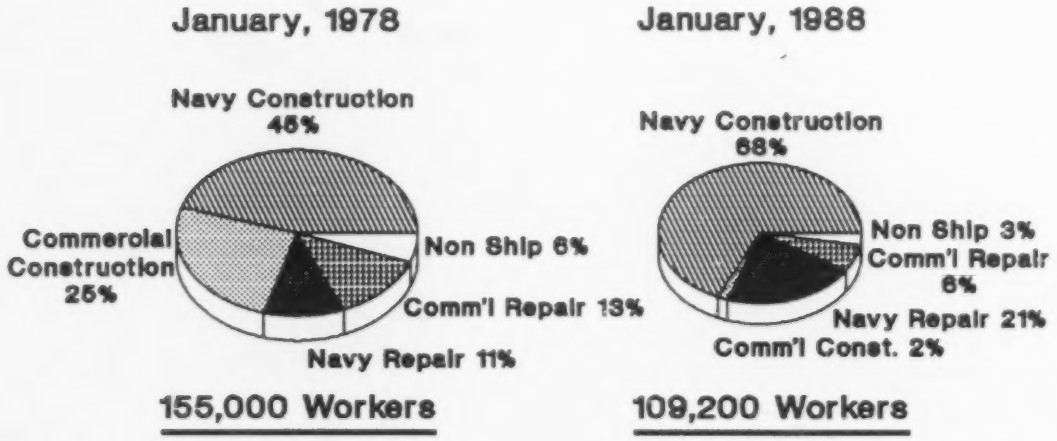
INDUSTRY EMPLOYMENT DISTRIBUTION

The five charts in this segment of the report provide graphic proof of the domination of this industry by the United States Navy. In January 1978, the Navy accounted for 56 percent of the work load for over 150,000 total workers in the industry. Now, with an employee base only two thirds its size of ten years ago, the Navy occupies the efforts of 89 percent of the entire industry. Based on these percentages, the Navy provides work in 1988 for approximately 10,000 more employees than ten years ago but the collapse of the remainder of the business base has cost over 55,000 jobs in the last ten years.

The size of the 1988 pie charts represent the ratio of 1988 workers to those holding jobs in 1978 so that the reader can discover at a glance these market areas hardest hit by the decline. Also clearly shown is the destruction of the balanced market share within the geographic areas. The West Coast is particularly illustrative. This area has gone from a well balanced market in 1978 to almost total reliance on Navy ship repair in 1988. While the absolute numbers are smaller, the Great Lakes commercial construction segment has gone from 60 percent of the market to zero in ten years. This type of market dislocation could not have been predicted - and was not.

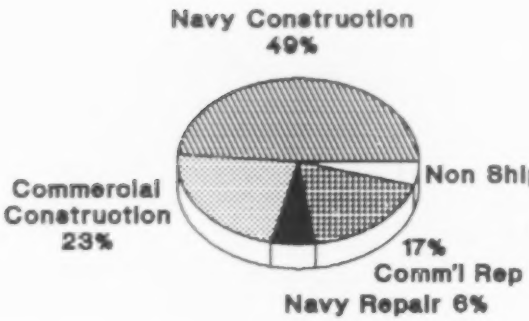
In sum, the charts clearly display an industry that is shrinking and which has only one major customer - the U.S. Navy. Note that the following pie charts reflect total employment in both the SYMBA (shipyard mobilization base) and non-SYMBA yards.

NATIONAL DISTRIBUTION BY EMPLOYMENT ACTIVITY



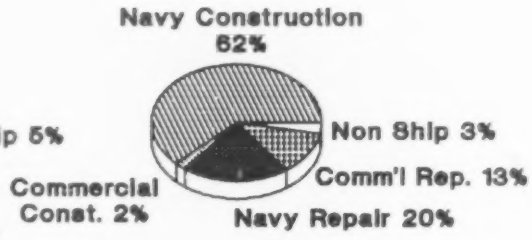
GULF COAST DISTRIBUTION BY EMPLOYMENT ACTIVITY

January, 1978



43,700 Workers

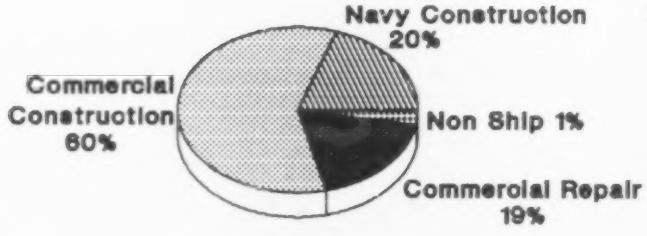
January, 1988



21,600 Workers

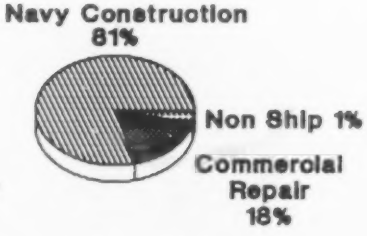
GREAT LAKES DISTRIBUTION BY EMPLOYMENT ACTIVITY

January, 1978



4,900 Workers

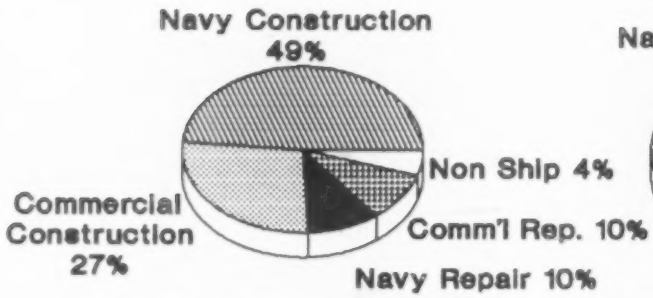
January, 1988



2,100 Workers

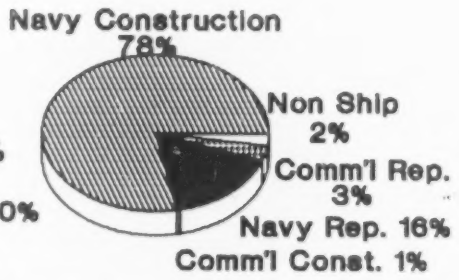
EAST COAST DISTRIBUTION BY EMPLOYMENT ACTIVITY

January, 1978



82,800 Workers

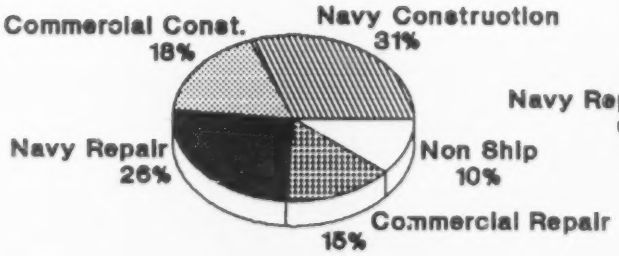
January ,1988



73,600 Workers

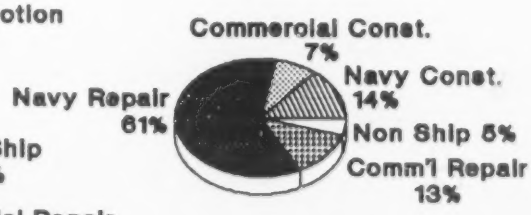
WEST COAST DISTRIBUTION BY EMPLOYMENT ACTIVITY

January, 1978



23,600 Workers

January, 1988



11,900 Workers

YARDS MOVING TO LUMP-SUM WAGE PACTS

In a conscious effort to keep labor costs in line and to increase productivity, management in private domestic shipyards has devised a number of innovative provisions in collective bargaining agreements with union workers. One such provision is the use of lump-sum payments in lieu of general wage increases to union employees. The first shipyard to successfully negotiate with its union a lump-sum payment provision was the Electric Boat Division of General Dynamics Corporation at its Groton, CT facility in December 1984.

The typical lump-sum payment is a one-time, once-a-year increase in a worker's earnings. Employers have taken the position that the lump-sum is not added to a worker's base pay for the purposes of calculating overtime rates, vacation pay, and fringe benefits. Also, the lump-sum should not increase the base pay of the worker for subsequent pay raises.

Recently, the position of the employers was upheld in litigation in the case of Minizza v. Stone Container Corp. (No. 87-1348). Here, the United States Court of Appeals for the Third Circuit (with one judge dissenting) declared that a negotiated lump-sum payment - designated as an inducement for contract ratification - did not have to be included in the "regular rate" for purposes of Fair Labor Standards Act overtime calculations.

Labor law experts caution that several steps should be taken during bargaining to demonstrate the parties' intention that lump-sum payments are not to be part of the regular wage rate for overtime purposes. These are--

o If possible, the agreement should expressly state that a "ratification bonus" is designed only to secure ratification and is not intended to be viewed as compensation for services rendered.

o The agreement should expressly state the parties' intention that the bonus is not to have a "roll-up" effect on vacation pay, holiday pay, overtime or other benefits tied to regular hourly wage rates.

o The lump-sum payment should not be conditioned on the hours worked by employee recipients.

o The lump-sum payment should be made unconditionally to those employees on the rolls on the date of ratification of the agreement, without any other eligibility requirements tied to future (or past) employment.

In this era of fiscal constraints on Navy budgets, the more shipyard management can rein in costs the more vessels can be built and repaired for the taxpayer's dollar. Thus, lump-sum payments can produce real tangible benefits to both management and the Navy, the predominant customer of the U.S. shipbuilding and repair industry.

The Shipbuilders Council of America estimates that over 85 percent of production workers in the shipbuilding and ship repair industry are covered by lump-sum payments in lieu of general wage increases in current labor agreements.

INDEX OF STRAIGHT-TIME HOURLY EARNINGS FOR SELECTED U.S. PRIVATE SHIPYARDS
(September 1980 = 100)

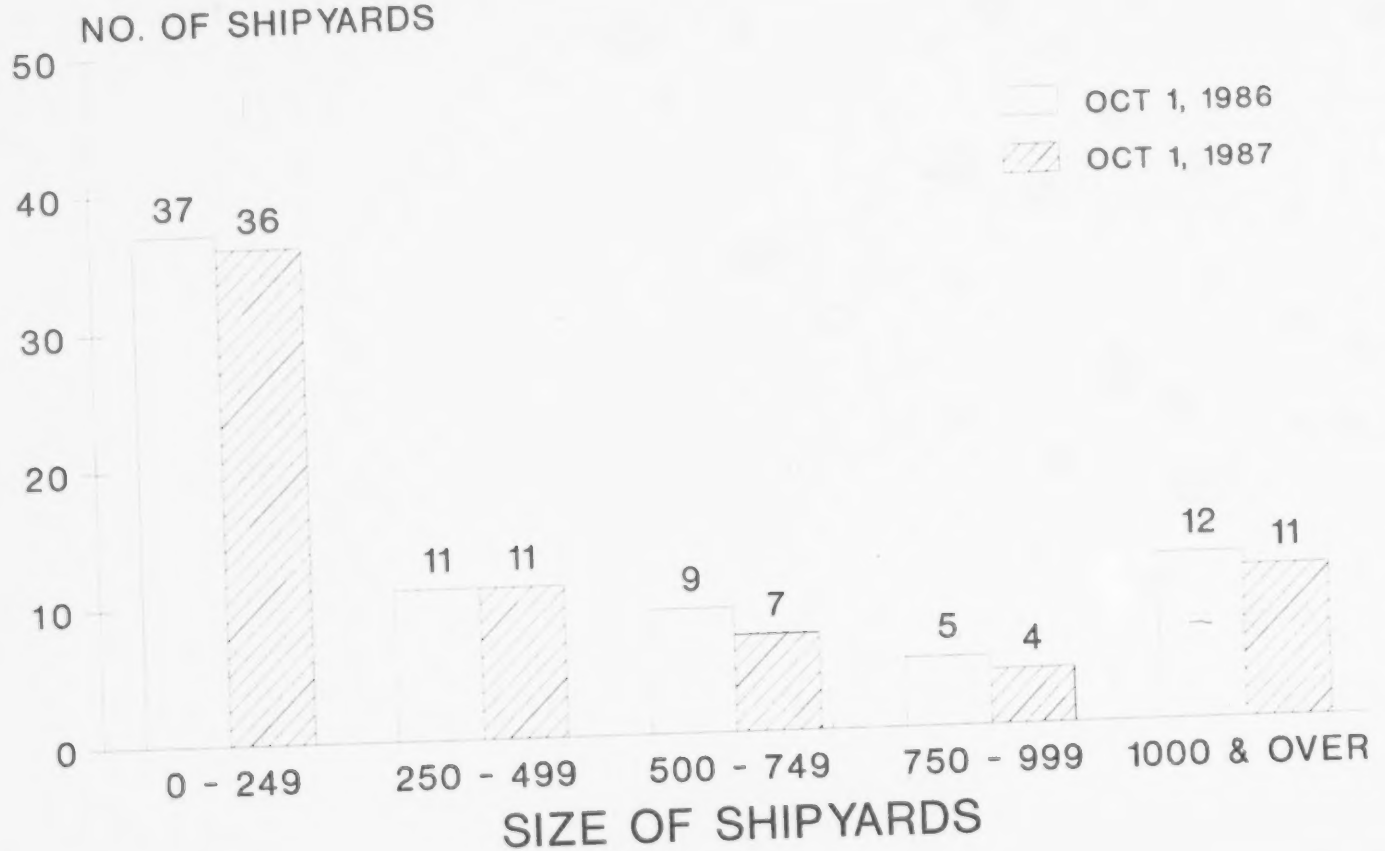
	1982	1983	1984	1985	1986	1987	1988
January	113.6	121.3	127.6	129.1	132.5	136.6	134.9
February	114.4	121.8	127.0	128.8	132.4	136.3	134.3
March	114.5	121.9	126.9	131.0	132.4	136.5	134.3
April	114.6	121.8	126.6	130.9	132.7	136.6	
May	114.3	121.9	126.0	130.9	135.3	136.5	
June	114.1	121.3	125.7	130.6	134.9	136.6	
July	116.4	122.5	126.4	130.6	135.4	137.0	
August	117.4	122.5	126.7	130.9	135.4	136.4	
September	118.1	123.1	126.8	130.9	135.5	136.4	
October	120.0	124.0	127.7	131.6	135.9	135.6	
November	120.0	126.3	127.7	131.4	135.7	134.9	
December	120.6	127.0	128.6	131.4	135.9	134.9	
Annual Avg	116.5	123.0	127.0	130.7	134.5	136.2	

MATERIAL INDEX FOR NAVSEA STEEL VESSEL CONTRACTS
(1967 = 100)

	1982	1983	1984	1985	1986	1987	1988
January	308.7	308.2	320.2	326.0	321.9	325.7	342.7
February	309.3	311.7	321.5	326.4	322.3	326.1	346.6
March	309.5	312.5	322.1	327.0	322.2	325.8	348.0
April	310.1	312.7	322.8	327.0	322.9	325.6	350.3
May	309.8	312.6	323.8	326.7	323.3	326.2	350.8
June	308.4	312.8	323.6	323.2	323.1	326.7	351.7
July	308.5	313.6	324.3	326.4	323.5	328.1	
August	308.4	313.8	324.4	326.7	323.7	329.2	
September	308.2	316.3	324.9	326.6	324.1	332.0	
October	309.2	316.3	325.3	326.6	324.2	338.4	
November	308.8	317.1	325.3	326.1	324.0	340.2	
December	307.7	318.4	325.2	326.2	324.2	340.6	
Annual Avg.	308.9	313.8	323.6	326.5	323.2	330.4	

Source: Bureau of Labor Statistics

EMPLOYMENT DISTRIBUTION
U.S. PRIVATE SHIPYARD BASE



EARNINGS AVERAGES FOR SELECTED OCCUPATIONS IN U.S. SHIPYARDS

BUREAU OF LABOR STATISTICS WAGE SURVEY OF OCTOBER 1986

Department and Occupation	United States		Atlantic Coast		Gulf Coast		Great Lakes		Pacific Coast	
	Number of Workers	Average Hourly Earnings	Number of Workers	Average Hourly Earnings	Number of Workers	Average Hourly Earnings	Number of Workers	Average Hourly Earnings	Number of Workers	Average Hourly Earnings
Production										
Electronics technicians	816	$11.89	-	-	-	-	-	-	-	-
Electronics technicians II	306	11.91	-	-	-	-	-	-	-	-
Electronics technicians III	285	12.66	-	-	-	-	-	-	-	-
Inspectors:										
Class B	197	11.64	90	$11.44	-	-	-	-	-	-
Insulators	608	11.16	460	11.19	-	-	-	-	-	-
Loft Workers	116	12.01	50	10.49	-	-	-	-	-	-
Machine-tool operators, production	804	11.34	730	11.19	-	-	-	-	-	-
Class A	724	11.44	-	-	-	-	-	-	-	-
Class B	60	10.09	46	9.47	-	-	-	-	46	$13.09
Class C	20	11.31	10	9.14	-	-	-	-	-	-
Machinists, production	792	11.16	-	-	-	-	-	-	-	-
Marine electricians	3,576	11.31	1,911	10.80	112	$11.05	-	-	-	-
Marine machinists	2,851	11.36	1,875	11.06	-	-	199	$10.91	135	13.16
Marine pipefitters	3,661	11.41	1,632	10.99	415	11.14	-	-	690	13.39
Marine riggers	1,397	11.14	962	10.69	-	-	257	11.04	509	12.69
Marine trades helpers	1,978	7.54	-	-	-	-	-	-	748	12.93
Painters	3,363	11.14	-	-	-	-	-	-	249	12.99
Sheet-metal workers	2,312	11.69	1,398	11.44	893	10.78	125	10.59	-	-
Shipfitters	4,339	11.36	2,169	11.28	-	-	-	-	433	13.25
Shipwrights	1,915	11.42	-	-	882	10.52	-	-	459	12.95
Welders, hand	5,558	11.32	-	-	-	-	-	-	880	12.76
Class A	4,011	11.43	-	-	1,030	9.99	-	-	-	-
Class B	1,547	11.03	141	10.30	584	10.81	-	-	880	12.86
Welders, machine(arc or gas)	1,290	11.44	-	-	446	8.92	-	-	-	-
					-	-	-	-	-	-
Maintenance										
Carpenters, maintenance	104	11.22	93	11.20	-	-	-	-	-	-
Electricians, maintenance	250	11.34	183	11.35	-	-	-	-	-	-
Mechanics, maintenance	219	10.79	-	-	-	-	-	-	17	13.18
Pipefitters, maintenance	176	11.53	148	11.52	-	-	-	-	-	-
Welders, maintenance	69	10.90	58	10.70	-	-	-	-	-	-
									-	-
Material movement and service										
Crane operators	709	11.54	345	11.59	196	10.96	55	11.32	97	12.97
Electric bridge(traveling)	200	11.61	-	-	-	-	-	-	-	-
Gantry crane	216	11.58	137	11.88	40	10.66	-	-	-	-
Other (including combinations)	260	11.48	-	-	-	-	50	11.38	36	13.47
Guards	388	8.14	-	-	-	-	-	-	44	10.86
Guards I	170	7.03	-	-	-	-	-	-	-	-
Guards II	130	10.29	-	-	-	-	-	-	41	12.06
Janitors, porters, or cleaners	682	8.94	-	-	-	-	-	-	-	-
Power-truck operators	366	10.36	-	-	-	-	-	-	48	13.37
Forklift operators	295	10.20	-	-	-	-	-	-		
Truckdrivers	270	10.65	114	10.52	60	8.50	-	-		

SHIPBUILDERS COUNCIL MEMBERS & STAFF

REGULAR MEMBERS

ADDSCO Industries, Inc
Mobile, AL

Avondale Industries, Inc.
New Orleans, LA

Bath Iron Works Corporation
Bath, ME

Bethlehem Steel Corporation
Bethlehem, PA

Capital Marine Corporation
Chester, PA

Continental Maritime
Industries, Inc.
San Francisco, CA

General Dynamics Corporation
St. Louis, MO

General Ship Corporation
East Boston, MA

Ingalls Shipbuilding, Inc.
Pascagoula, MS

Intermarine U.S.A.
Savannah, GA

Jacksonville Shipyards, Inc.
Jacksonville, FL

The Jonathan Corporation
Norfolk, VA

Marinette Marine Corporation
Marinette, WI

McDermott Corporation
New Orleans, LA

Metro Machine Corporation
Norfolk, VA

National Steel &
Shipbuilding Company
San Diego, CA

Newport News Shipbuilding
Newport News, VA

Norfolk Shipbuilding &
Drydock Corporation
Norfolk, VA

Northwest Marine Iron Works
Portland, OR

Peterson Builders, Inc.
Sturgeon Bay, WI

Robert E. Derecktor of
Rhode Island, Inc.
Middletown, RI

Southwest Marine, Inc.
San Diego, CA

Tampa Shipyards, Inc.
Tampa, FL

Textron Marine Systems
New Orleans, LA

Todd Shipyards Corporation
Seattle, WA

ALLIED INDUSTRIES MEMBERS

ALCOA/TRE
Santa Ana, CA

Bird-Johnson Company
Walpole, MA

Centrico, Inc.
Northvale, NJ

Colt Industries, Inc.
Washington, DC

Combustion Engineering, Inc.
Windsor, CT

Dresser Pump Division
Dresser Industries, Inc.
Harrison, NJ

Eaton Corporation
Cutler-Hammer Products
Baltimore, MD

General Electric Company
Washington, DC

Hopeman Brothers, Inc.
Waynesboro, VA

IMO Delaval, Inc.
Lawrenceville, NJ

Jamestown Metal Marine
Sales, Inc.
Boca Raton, FL

Jered Brown Brothers, Inc.
Troy, MI

Lake Shore, Inc.
Iron Mountain, MI

Raytheon Service Company
Arlington, VA

Sperry Marine, Inc.
Charlottesville, VA

Westinghouse Electric Corporation
Sunnyvale, CA

York International Corporation
York, PA

AFFILIATE MEMBERS

The Bingham Group
Washinton, DC

PacOrd, Inc.
National City, CA

Poten & Partners, Inc.
New York, NY

Seacoast Electric Supply Corporation
Rye, NY

NAVAL ARCHITECT MEMBERS

JJH Inc.
Cherry Hill, NJ

John J. McMullen Associates, Inc.
New York, NY

M. Rosenblatt & Son, Inc.
New York, NY

ASSOCIATION MEMBERS

New York and New Jersey Dry Dock Association
Brooklyn, NY

South Tidewater Association of Ship Repairers, Inc.
Chesapeake, VA

STAFF

John J. Stocker
President

W. Patrick Morris
Vice President &
General Counsel

Silas O. Nunn
Vice President, Programs

Beverly C. Kendall
Secretary & Treasurer

Nicholas M. Baker
Director, Office of Export Assistance

Cynthia L. Brown
Director, Legislative Programs

William G. Kurfehs
Director, Ship Repair Programs

Carol Pardon
Assistant Director,
Legislative Programs